

ABSTRACT OF THE DISCLOSURE

The present invention relates to a chemically modified mutant protein including a cysteine residue substituted for a residue other than cysteine in a precursor protein, the substituted cysteine residue being subsequently modified by reacting the
5 cysteine residue with a glycosylated thiosulfonate. Also, a method of producing the chemically modified mutant protein is provided. The present invention also relates to a glycosylated methanethiosulfonate. Another aspect of the present invention is a method of modifying the functional characteristics of a protein including providing a protein and reacting the protein with a glycosylated methanethiosulfonate reagent under conditions
10 effective to produce a glycoprotein with altered functional characteristics as compared to the protein. In addition, the present invention relates to methods of determining the structure-function relationships of chemically modified mutant proteins.